

Product: Front-loading washing machine	Overview of new/modified types of washing machines introduced to the market in 2001	Group: 21
Date: 11.1.2002		
Reference: N-Å Carlsson		Page: 1(10)

ASKO Cylinda's range of washing machines was modified during the autumn of 2001. A brief overview of the modifications which were carried out follows below.

Further information is given in the product data given below.

New type	Replaces old type	Main differences	Product info
WM33A	WM33	Programmer no longer fitted, replaced by rotary switch and electronic control card. E2 no longer fitted, new programs. New panel graphic.	A
WM44A	WM44	Programmer no longer fitted, replaced by rotary switch and electronic control card. E2 no longer fitted, new programs. New panel graphic.	A
WM50	NEW	Electronic control with knob and 7-segment LED display. 11 programs.	B
WM55A	WM55	New control card. New menu logic. New programs. Among other things, 1-24 hour delayed start. New panel graphic. Shop program indicated on the display.	C
WM56	NEW	Electronic control with buttons and display. 8 programs. Shop program indicated on display.	D
WM66A	WM66	See WM55A.	C

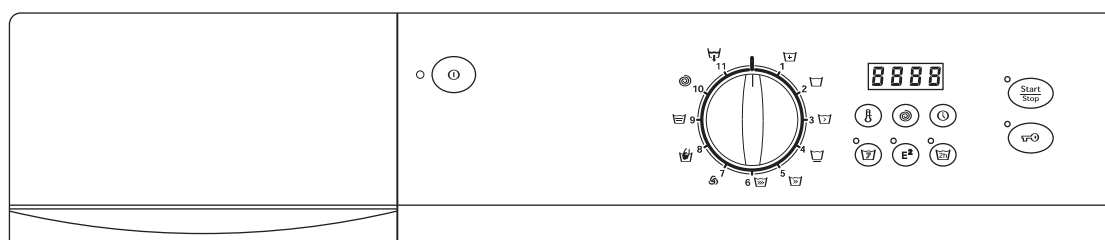
Product: Front-loading washing machine	<b>New type of washing machine WM50</b>	Group: 21
Date: 11.1.2002		<b>B</b>
Reference: N-Å Carlsson		Page:2(10)

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**This service manual is intended as a supplement to the W600 series Service Manual.**

## Example of WM50 Panel









## General

Mechanically the machine is based on the WM55 (W640/W650), with the exception of the panel and control unit. For more information see the service manual for the W600-series.

The machine is available with different pushbutton options, thus the pushbuttons may vary from one market to another. See also loops on the control card below.

## Handling

1. Sort the wash
2. Press the main switch, , open the door, , and place the wash in the machine.
3. Pour in the washing powder and also the rinsing aid if necessary.
4. Select program, adjust temperature, spin speed and option if necessary. Settings appear on the display. Options appear as a lit LED alongside each button.
5. Close the door and start the program with the - button.  
To interrupt a program hold down the - button for 3 seconds.
6. At the end of the wash program open the door with .
7. After the wash turn off the main switch  and close the wash door.

## Display indications




The display shows	Explanation	
<b>00</b>	No program selected	
<b>24h</b>	One or two digits, followed by an h. Delayed start has been selected and the program has started. The display shows the number of hours left until the program starts.	
<b>2h35</b> <b>18</b>	One digit, an H followed by two digits or only 1-2 digits, means that a program is running. The display shows the remaining time in the program in hours and minutes.	
<b>95C</b> <b>205F</b> <b>CC</b> <b>CF</b>	Appears when temperature is selected. The temperature can be indicated either in degrees Celsius (C) or Fahrenheit (F). CC and CF respectively mean that the machine is set to the temperature of the incoming water.  To change the display see the section Washing temperature – Celsius or Fahrenheit in the instructions for use.	
<b>End</b>	Program ready. Remove the wash.	
<b>no d</b>	Can be displayed when selecting spin speed. Indicates No spin/No drain. The programme will then be run without spins and will be completed with the final rinse water still in the machine.	
<b>0</b>	Can be displayed when selecting spin speed. Indicates No spin. The programme will then be run without spins.	
<b>- -</b>	May appear instead of temperature when the setting is not appropriate. For example temperature cannot be selected for Rinse program.	
<b>AC</b>	When the Anti-crease option has been activated the drum rotates a few times/min. for 2 hours after the program has ended. In the mean time AC appears on the display. You can end and open the door at any time by pressing the door opening button.	

### **Options and settings (not all options are provided on all machines):**

Settings are shown on the display or on LED's alongside the respective buttons. The machine remembers the settings and options you make for each program and start from them (with one or two exceptions – temperatures over 60°C and delayed start) next time you select the program concerned.

#### **Temperature 30-95°C or C**

For certain programs it is not possible to select a temperature higher than 40°C, (see program table).

   **F** when setting for Fahrenheit) means that the washing temperature will be equal to the temperature of the incoming water.

#### **Spin 400-1600 rpm. No spin ( ) or No drain ( ).**

For certain programs it is not possible to select a speed higher than 800 rpm, see the table.

Speed 400-800 rpm means short spin.

Speed 1000-1600 rpm always means long final spin.

#### **Delayed start (1-24 hours)**

 means that the option has been switched off and the program will start immediately as usual.

#### **Super rinse**

Super rinse means that extra rinses are added to the program (see program table).

#### **E2 Economy and efficiency**

The option means that the main wash is extended by 22 minutes. E2 can only be used on Heavy wash, Normal wash and Light wash.

#### **High water level**

High water level means that an extra amount of water is used in the main wash and rinses. This option may be used for all wash programs except Wool wash and Hand wash. These programs always have high water level.

#### **Pre-soak**

Pre-soak means that the wash is left to soak two hours before the program starts.

#### **Anti-crease**



Anti-crease means that the machine rotates the drum one or two seconds per minute for two hours after the end of the program. Anti-crease does not operate together with No spin and No spin/No drain.

## Error messages

If an error or fault occurs in the course of the program this is indicated on the display.


**N.B.**

To reset the error message the main switch  must be turned off.

The display shows	Description	Explanation/proposed measure
<b>F1</b>	Over flow	The sensor receives the first signal that Over flow has taken place if, for example, an inlet valve has jammed or if the machine has taken in water for a reason which the sensor cannot control. Machines with a float also receive the indication when there is water at the bottom of the machine.
<b>F2</b>	Wash motor fault	Interruption in any cables to the motor gives rise to this fault, which means that an interruption in the power to the motor may also produce the fault. Locking of the motor also results in an error indication.
<b>F3</b>	Draining fault	The machine indicates that it has not succeeded in pumping out the water within 3 minutes. Where there is a draining fault check: - that no object has caught in the drain hose outlet - that the drain pump is not blocked by foreign objects. Clean the pump, see Chapter 11, Maintenance and cleaning, in the instructions for use. - that there are no kinks in the drain hose. After the fault has been remedied run the Drain program. If this does not help, call service.
<b>F4</b>	Water inlet fault	The indicates that it does not reach the water level within 5 minutes. Where there is a fault in the water supply, check: - that the cock on the water pipe is open. - that the screen in the machine water intake is not blocked. 1. Close the water cock. 2. Unscrew the hose. 3. Clean the screen in the inlet valve on the machine. 4. Retighten the hose. 5. Open the water cock. 6. Run the program again to check whether the fault has been remedied.
<b>F5</b>	Thermistor fault	The machine indicates whether there is an interruption or short-circuit in the thermistor.
<b>F6</b>	Temperature stop fault	Indicates whether the temperature is not reached within 80 mins., 30 mins. For wool and hand wash.
<b>F7</b>	Foaming (this function is not provided on all machines).	The fault indication appears at the end of the program, but foaming is checked after the main wash. Run the rinse program once. Check the washing powder. Use low lather washing powder.
<b>F8</b>	Door opening fault	A fault has occurred on the control card, which must be replaced to ensure complete safety.
	The machine has not spun.	1. The machine has a built-in imbalance sensor which causes the speed to be reduced or the spin to be jumped if there is major imbalance in the load. Turn off the main switch and turn it on again. Open the door and redistribute the wash. 2. After the fault is remedied run the Spin program.
	You have tried to start a program with the door open.	Close the door and try again.

## Faultfinding

### The machine does not start

1. Is the washing door properly closed?
2. Check that the Delayed start option has been switched on. The time remaining until start will then appear in whole hours on the display, e.g. **24h**. To change: stop the program, change the setting and restart.
3. Is there a break in the power supply? Check the house fuses (plugs).
4. Has the child lock been switched on? If so hold down the - button for three seconds.

## Consumption values

The following conditions apply to the consumption values indicated below:

Temperature of the incoming water: 15°C. Element power: 2000W. Options: none.

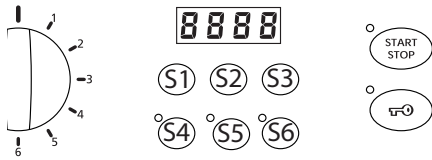
PROGRAMME	MATERIAL/WASHING TEMPERATURE(1)	LOAD (2)	WATER CONSUMPTION (approx. litre)	POWER CONSUMPTION (approx. kWh)	PROGRAMME TIME (approx. minutes)
Heavy wash	Cotton, linen, 60°C	5,0 kg	5-rinse: 62 3-rinse: 52	1,20	140 135
Normal wash	Cotton, linen, 60°C	5,0 kg	59 49	0,95	125 120
Light wash	Cotton, linen, 60°C	5,0 kg	59 49	0,90	85 80
Synthetic wash	Polyester, cotton / polyester, nylon, 40 C	3,0 kg	28	0,35	65
Quick wash	Cotton, linen, 60°C	5,0 kg	35	0,90	58
Super quick wash	Polyester, cotton / polyester, nylon, 40 C	3,0 kg	22	0,30	35
Wool wash	Wool/Hand wash, IWS, Superwash, 30°C	2,0 kg	54	0,30	40
Hand wash	Wool/Hand wash, IWS Superwash, 30°C	2,0 kg	54	0,30	40
Rinse programme	Cotton, linen	5,0 kg	7-12	0,05	Varies according to model
Spin	Cotton, linen	5,0 kg	----	0,05	Varies according to model
Drain	Cotton, linen	5,0 kg	----	----	1

(1) All programmes are set to the highest available spin speed.

(2) The machine can handle a maximum load of 6.0 kg.

## Test program

The machine control unit incorporates a built-in test program which can be used for faultfinding. The machine can be provided with various silicon chips for different markets, which is why we have numbered the buttons as shown in the figure below:



Hold down  and at the same time press S5 5 times in 15 seconds to start level 1 of the test program (see below).

Press S6 once to reach level 2.

Press S6 again to return to level 1.

 ends the test program.

### Select level 1

- S1 Inlet valve 1 (pre-wash compartment)
- S2 Inlet valve 2 (main wash compartment)
- S3 Inlet valve 3 (hot water)
- S4 Inlet valve 4 (washing powder compartment)
- S5 Door pull magnet

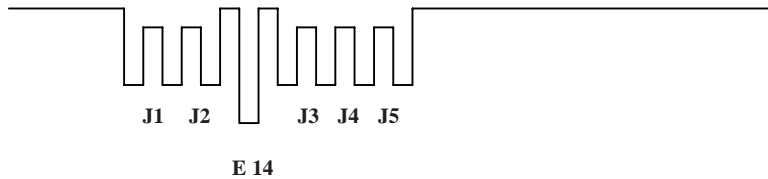
### Select level 2

- S1 Heating relay (clicking sound from relay on control unit).
- S2 Drain pump
- S3 Motor, normal running
- S4 Motor, economy running
- S5 Long spin

## Loops on WM 50 control card

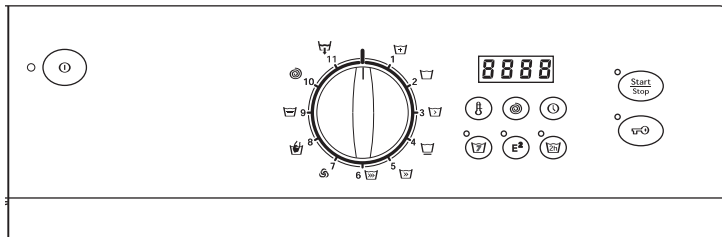
Loops and their function.

Control unit Art.no. 8064257



E 14

Loop	Option	Not broken / Closed	Broken / Open
<b>J1</b>	Eco/High water level (S5)	Eco	High water level
<b>J2</b>	Pre-soak/Anti-crease (S6)	Pre-soak	Anti-crease
<b>J3</b>	Number of rinses	3 rinses	5 rinses
<b>J4</b>	Foaming	Off	On
<b>J5</b>	Not used		



### Reprogramming display and button functions.

#### Change from Celsius to Fahrenheit.

Program knob in 0 position 5 x Start + 5 x Temperature.

Change setting with Temperature button.

#### Setting child-safe Start.

Program knob in 0 position 5 x Start + 5 x Spin.

Change setting with the Spin button, 0 or 3 seconds.

#### Setting of water intake.

Program knob in 0 position 5 x Start + 5 x Later start.

Change setting with Later start button. C=cold E=mix H=hot

#### Setting of spin speed.

Program knob in 0 position. Hold down the Start button+ press 5 x Super rinse.

Release the Start button and change setting with Super rinse.

1300, 1400, 1500 or 1600 rpm.



### Program WM50 5 -rinse

Programme information				Programme content							Other	
Programme No.	Programme	Max. quantity	Temperature °C (A)	Max. spin speed rev./min	Pre-wash	Main wash	Spin	Rinse (B)	Spin	Rinse (B)	Spin	
1	Heavy wash	●	C,30-95	1500	■	■	⊙	🧺🧺🧺	⊙	🧺🧺	⊙	
2	Normal wash	●	C,30-95	1500		■	⊙	🧺🧺🧺	⊙	🧺🧺	⊙	
3	Light wash	●	C,30-95	1500		■	⊙	🧺🧺🧺	⊙	🧺🧺	⊙	Shorter main wash than for Normal wash.
4	Synthetic wash	◐	C,30-95	800		■		🧺🧺🧺			⊙	
5	Quick wash	●	C,30-95	1500		■		🧺🧺			⊙	
6	Super quick wash	◐	C,30-95	1500		■		🧺🧺			⊙	
7	Wool wash (C)	◐	C,30-40	800		■		🧺🧺🧺			⊙	
8	Hand wash (C)	◐	C,30-40	800		■		🧺🧺🧺			⊙	Slightly more gentle than Wool wash.
9	Rinse programme	●		1500				🧺			⊙	
10	Spin	●		1500							⊙	
11	Drain	●	Pumping only									

● 1/1 (6,0 kg)

◐ 1/2 (3,0 kg)

◑ 1/3 (2,0 kg)

■ Wash

🧺 Rinse

⊙ Short spin  
(max. 800 rev./min)

⊙ Long spin

(A) C in the display denotes the temperature of the incoming water.

(B) The Super rinse On option provides two extra rinses before the final normal rinse.

(C) Delicate wash – high water level.

WM505566-5

### Program WM50 3 -rinse

Programme information				Programme content							Other	
Programme No.	Programme	Max. quantity	Temperature °C (A)	Max. spin speed rev./min	Pre-wash	Main wash	Spin	Rinse (B)	Spin	Rinse (B)	Spin	
1	Heavy wash	●	C,30-95	1500	■	■	⊙	🧺	⊙	🧺	⊙	🧺
2	Normal wash	●	C,30-95	1500		■	⊙	🧺	⊙	🧺	⊙	🧺
3	Light wash	●	C,30-95	1500		■	⊙	🧺	⊙	🧺	⊙	🧺
4	Synthetic wash	◐	C,30-95	800		■		🧺		🧺		⊙
5	Quick wash	●	C,30-95	1500		■		🧺		🧺		⊙
6	Super quick wash	◐	C,30-95	1500		■		🧺		🧺		⊙
7	Wool wash (C)	◐	C,30-40	800		■		🧺		🧺		⊙
8	Hand wash (C)	◐	C,30-40	800		■		🧺		🧺		⊙
9	Rinse programme	●		1500				🧺				⊙
10	Spin	●		1500								⊙
11	Drain	●	Pumping only									

● 1/1 (6,0 kg)

◐ 1/2 (3,0 kg)

◑ 1/3 (2,0 kg)

■ Wash

🧺 Rinse

⊙ Short spin  
(max. 800 rev./min)

⊙ Long spin

(A) C in the display denotes the temperature of the incoming water.

(B) With the Super Rinse On option:  
For programmes 1-3, four extra rinses will be included, and one spin will be omitted.

For programmes 4-8: two extra rinses will be included before the final ordinary rinse.

(C) Delicate wash – high water level.

WM505566-3

## Components and measured values

### WASHING MACHINE MOTOR

WM 50/55A/56/66A (FHP)

Art.no. 80 637 34 (50/60 Hz)

Resistances:

Pins 5-6 Stator 1,58 W

Pins 7-6 Stator 0,87 W

Pins 3-4 Rotor 1,20 W\*

Pins 1-2 Tacho 135 W

\*) 1,20 W measured diagonally across collector.

All resistance values are  $\pm 8\%$ .

### MOTOR CONTROL UNIT WM 50/55A/56/66A

Art.no. 80 613 99

The motor control unit is an external unit (MCU) which is installed on the bottom and connected to the program control card (PCU), see electrical diagram.

### ELEMENT

#### 2000 W

Art.no. 80 617 06

Resistance: 28,4 W

#### 1000 W

Art.no. 80 617 07 (Certain models)

Resistance: 56,7 W

### THERMISTOR

Art.no. 80 616 63

Resistance: 65-35 kW

Room temperature 20-30 °C

The thermistor for temperature measurement is installed between the motor cradle and the tank.

The thermistor measures and controls the water temperature, which may vary from 0-90 °C.

The element is disconnected if the thermistor is short-circuited or disconnected from the program control card or programmer.

### DRAIN PUMP

#### 50 Hz

Art.no. 80 616 96

N.B. Ordered under art.no. 88 011 66.

Resistance: 144 W

Current: 0,2 A, 23 W loaded

#### 60 Hz

Art no. 80 619 37

N.B. Ordered under art.no. 88 011 67.

Resistance: 76 W

Current: 0,3 A, 28 W loaded

The drain pump is combined with an integrated needle trap, which can be cleaned by the user.

If the drain pump has run for 180 seconds during draining, the program is stopped, reset and an error code appears on the display.

### LEVEL SWITCH

Art.no. 80 642 75

An electromechanical level switch with two levels, see wiring diagram. Controls the water level and starts the drain pump if Over flow is indicated.

## **Components and measured values**

### **LEVEL SENSOR**

Art.no. 80 616 64  
ASKO Level sensor type 1166.  
Voltage:  
0,5 V output from the sensor at pressure 0 and 0-level is reached during pumping out.  
Measurement by control unit.

The level sensor is mounted on the bridge for electrical components and connected to the PCU, see electrical diagram.

### **RADIO SUPPRESSION FILTER**

Art.no. 80 585 58  
Leakage current 230 V/ 50/60 Hz 0,3-0,4 mA

The filter eliminates radio interferences in the machine.

### **INLET VALVES**

#### **3-way inlet valve**

Art.no. 80 617 57  
Resistance: 3,7 k $\Omega$   $\pm$  0,5 k $\Omega$   
Current: 0,02 A, 5 W

#### **Inlet valve for hot water** (option)

Art.no. 80 617 29  
Resistance: 3,7 k $\Omega$   $\pm$  0,5 k $\Omega$   
Current: 0,02 A, 5 W

### **INDICATING LAMP** (WM50/55A/66A)

Art.no. 80 640 68 USA  
Current: 230 V, 50 Hz 1,7 mA

Art.no. 80 640 69 EU  
Current: 230 V, 50 Hz 1,7 mA

The lamp indicates that the main switch is turned on.

### **DOOR LOCK**

Art.no. 80 616 79  
Resistance: 122  $\Omega$   
Current: ca 2 A

The door lock is mechanical and is controlled by the button for door opening and different safety devices.

### **PROGRAM CONTROL CARD** (WM50/55A)

Art. no. 80 642 57

### **PANEL CARD** (WM50)

Art.no. 80 642 60 (ASKO)  
Art.no. 80 642 71 (OEM)

### **FUSE**

Art.no. 80 554 21 6,3 A (EU)  
80 581 40 15 A (US)